

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PF-0633 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 26048	International filing date (day/month/year) 04/11/1999	(Earliest) Priority Date (day/month/year) 04/11/1998
Applicant INCYTE PHARMACEUTICAL, INC et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

HUMAN MEMBRANE TRANSPORT PROTEINS

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/26048

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C07K16/18 A61K38/17 C12Q1/68
C12N1/21

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K C12N A61K C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE GENEMBL [Online] 20 February 1998 (1998-02-20) HALLECK M.S. ET AL: "Homo sapiens putative ATPase mRNA, partial cds." XP002132693 Accession No. U78978 - & HALLECK, M.S. ET AL.: "Multiple members of a third subfamily of P-type ATPases identified by genomic sequences and ESTs." GENOME RESEARCH, vol. 8, no. 4, April 1998 (1998-04), pages 354-361, XP002132690 figure 2B page 357</p> <p>---</p> <p>-/--</p>	<p>1-16, 19, 20</p>
A		

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

* & * document member of the same patent family

Date of the actual completion of the international search

15 March 2000

Date of mailing of the international search report

20 JUNI 2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

ALCONADA RODRIG., A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/26048

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
3	X DATABASE GENEMBL [Online] 27 May 1998 (1998-05-27) STANCHI, F.: "Homo sapiens mRNA for putative ATPase, partial" XP002132694 Accession AJ006268	1-16, 19, 20
1	A ALLIKMETS R ET AL: "Characterization of the human ABC superfamily: isolation and mapping of 21 new genes using the expressed sequence tags database." HUMAN MOLECULAR GENETICS, (1996 OCT) 5 (10) 1649-55., XP002132691 figures 2,3; table 1	
1	A MASTROBERARDINO L ET AL: "Amino-acid transport by heterodimers of 4F2hc/CD98 and members of a permease family." NATURE, (1998 SEP 17) 395 (6699) 288-91., XP002132692 the whole document	
1	A SARDET C ET AL: "Molecular cloning, primary structure, and expression of the human growth factor-activatable Na ⁺ /H ⁺ antiporter." CELL, (1989 JAN 27) 56 (2) 271-80., XP000876824 the whole document	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 99/26048

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 19 and 20 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 17,18
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-16,19-20 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-16,19-20 (partially)

Human polypeptide comprising the amino acid sequence of SEQ ID NO:1 or any variant having at least 90% amino acid identity with said sequence, the polynucleotide sequence encoding said polypeptide (SEQ ID NO:18) and any variant having at least 90% identity with said polynucleotide sequence; a polynucleotide that hybridizes with said polynucleotide; methods for detection of the polynucleotide; expression vectors and hosts for the recombinant expression of said polypeptide; method for the production of said polypeptide; antibodies against said polypeptide, agonists, antagonists, pharmaceutical compositions containing said polypeptide and uses thereof for the treatment or prevention of a disorder.

2. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:2 and the polynucleotide sequence of SEQ ID NO:19.

3. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:3 and the polynucleotide sequence of SEQ ID NO:20.

4. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:4 and the polynucleotide sequence of SEQ ID NO:21.

5. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:5 and the polynucleotide sequence of SEQ ID NO:22.

6. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:6 and the polynucleotide sequence of SEQ ID NO:23.

7. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequences of SEQ ID NO:7 and 11 and the respective polynucleotide sequences of SEQ ID NO:24 and 28.

8. Claims: 1-16,19-20 (partially)

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:8 and the polynucleotide sequence of SEQ ID NO:25.

9. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:9 and the polynucleotide sequence of SEQ ID NO:26.

10. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:10 and the polynucleotide sequence of SEQ ID NO:27.

11. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:12 and the polynucleotide sequence of SEQ ID NO:29.

12. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:13 and the polynucleotide sequence of SEQ ID NO:30.

13. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:14 and the polynucleotide sequence of SEQ ID NO:31.

14. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:15 and the polynucleotide sequence of SEQ ID NO:32.

15. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:16 and the polynucleotide sequence of SEQ ID NO:33.

16. Claims: 1-16,19-20 (partially)

As subject 1, but comprising the polypeptide sequence of SEQ ID NO:17 and the polynucleotide sequence of SEQ ID NO:34.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 17,18

Present claims 17 and 18 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is not to be found, however, for any of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has not been carried out for those claims which do not appear to be supported and disclosed, namely those parts relating to the agonists and antagonists of the polypeptides of the invention.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.